

Amendments to the Claims:

Claim 1 (currently amended): A process for the simultaneous production of xylitol and ethanol from a hydrolyzed lignocellulose-containing material, comprising

providing a starting material of hydrolyzed lignocellulose-containing material, comprising xylose and glucose in aqueous solution, wherein xylose content is 50-300 g/l;

fermenting said starting material with a yeast strain which is capable of converting xylose to xylitol and glucose present to ethanol to form a fermented product comprising xylitol, ethanol and yeast, wherein during fermentation the xylose in the starting material is converted to xylitol and the glucose in the starting material is converted to ethanol and ~~at least 22.3 g/l~~ to 51.2 g/l of ethanol is produced in the fermentation solution;

recovering the resulting ethanol by distillation of the fermentation solution to obtain a distillate with ethanol and a remaining solution; and

recovering xylitol from the remaining solution by chromatographic separation.

Claim 2 (canceled)

Claim ~~3~~² (previously amended): The process according to Claim 1, wherein lignocellulose-containing material hydrolyzed is birch or grain hulls.

Claim 4 (canceled)

Claim ~~3~~³ (previously amended): The process according to Claim 1, further comprising crystallizing pure xylitol.

Claim ~~3~~⁴ (previously amended): The process according to Claim 1, wherein yeast cells are removed prior or subsequent to the distillation.

Claim ~~3~~⁵ (previously amended): The process according to Claim 1 wherein the yeast strain is of the genus *Candida* or *Debaryomyces*.

Claim ~~3~~⁶ (previously amended): The process according to Claim 1, wherein the yeast

is *Candida tropicalis*.

Claim ~~8~~⁷ (previously amended): The process according to Claim 1, wherein the yeast is *Debaryomyces hansenii*.

Claim 10 (canceled)

Claim ~~11~~⁸ (previously amended): The process according to Claim 1, wherein the hydrolyzed lignocellulose-containing material is produced by steam explosion and enzymatic hydrolysis of lignocellulose-containing material.

Claim ~~12~~⁹ (previously amended): The process according to Claim 1, wherein the chromatographic separation is carried out with a strong cation-exchanging resin as a stationary phase.

Claim ~~13~~¹⁰ (previously amended): The process according to Claim 1 wherein the fermentation is carried out at a pH of about 4 - 7.

Claim 14 (canceled)

Claim ~~15~~¹¹ (previously added): The process according to claim ~~8~~⁶, wherein the yeast is *Candida tropicalis* ATCC 9968.

Claim ~~16~~¹² (previously added): The process according to Claim ~~13~~¹⁰, wherein the fermentation is carried out at a pH of about 5.7 and at a temperature of about 25 - 35°C.

Claims 17-18 (canceled)

Claim ~~19~~¹³ (previously amended): The process according to claim 1, wherein the hydrolyzed lignocellulose-containing material is produced by a process selected from the group consisting of acid hydrolysis, enzymatic hydrolysis and a combination thereof.

Claim ~~20~~¹⁴ (previously amended): The process according to claim ~~10~~¹³, wherein hydrolysis is carried out by acid hydrolysis.

Claim ~~21~~¹⁵ (previously amended): The process according to Claim 1 wherein the lignocellulose-containing material is treated by steam explosion followed by hydrolysis.

Claim 22 (canceled)

Claim ~~23~~¹⁷ (currently amended): A process for the simultaneous production of xylitol and ethanol from a hydrolyzed lignocellulose-containing material, wherein lignocellulose-containing material hydrolyzed is selected from the group consisting of softwood, birch, beech, poplar, alder, plants, plant constituents, straw, hulls of wheat, corn, oat, barley, corn cobs, corn stems, nutshells, bagasse, cottonseed bran, wood chips, sawdust, sulphite spent liquor from woodpulp processing, waste from paper processing, and waste from woodpulp processing, comprising:

providing a starting material of hydrolyzed lignocellulose-containing material comprising xylose and glucose in aqueous solution, wherein xylose content is 50-300 g/l;

fermenting said starting material to produce a fermented solution with a yeast capable of converting xylose present in the starting material to xylitol and glucose present in the starting material to ethanol, said yeast selected from the group consisting of a yeast of the genera *Candida*, *Pichia*, *Pachysolen*, and *Debaryomyces*, said fermenting comprising reducing said xylose to xylitol and said glucose to ethanol, and said fermented solution comprising xylitol, ethanol, and spent yeast; wherein during fermentation the xylose in the starting material is converted to xylitol glucose in the starting material is converted to ethanol and at least 22.3 g/l to 51.2 g/l of ethanol is produced into the fermentation solution;

separating a substantial portion of said spent yeast from said fermented solution to produce a substantially clarified solution comprising ethanol and xylitol, said clarified solution comprising substantially less spent yeast by weight on a dry solids (substance) basis than said spent yeast in said fermented solution, and said separating comprising at least one separating method selected from group consisting of filtration, centrifugation and decanting;

recovering ethanol by distillation to obtain a distillate with ethanol and a remaining solution;

recovering xylitol from the remaining solution by chromatographic separation;
and

crystallizing said xylitol to produce xylitol crystals.

Claim ~~24~~¹⁶ (currently amended): A method according to Claim ~~23~~¹⁷ wherein hydrolysis to produce lignocellulose-containing material comprises at least one of the following: i) prehydrolysis of said lignocellulose-containing material by steam explosion of said lignocellulose-containing material and enzymatic hydrolysis of said lignocellulose-containing material with enzymes having a ~~cellulytic~~ cellulolytic and xylanolytic activity to hydrolyze said lignocellulose-containing material; and ii) acid hydrolysis of said lignocellulose-containing material.

Claim ~~25~~¹⁹ (previously amended): A method according to Claim ~~23~~¹⁷ including removing solids comprising lignin from said fermented solution.

Claim ~~26~~²⁰ (previously amended): A method according to Claim ~~23~~¹⁷ wherein said yeast is selected from the group consisting of *Candida tropicalis* strain having an accession number ATCC 9968, and *Debaryomyces hansenii*.

Claim ~~27~~²¹ (previously added): A method according to Claim ~~23~~¹⁷ wherein fermenting occurs at a temperature ranging from about 10 to about 45 degrees C at a pH ranging from 4 to 7 with a yeast concentration of about 1 to about 20 g of dry yeast per liter of solution having a xylose content of about 50 to about 300 g/l for about 24 to about 72 hours in the presence of nutrients.

Claim ~~28~~²² (previously amended): A method according to Claim ~~23~~¹⁷ wherein said crystallizing is selected from the group consisting of cooling crystallizing and evaporation crystallizing.

Claim ~~29~~²⁸ (previously added): A method according to Claim ~~23~~¹⁷ wherein said xylitol crystals are separated by centrifugation and washed with water to produce substantially pure crystalline xylitol.

Claim ~~30~~²⁹ (currently amended): A method according to Claim ~~23~~¹⁷ wherein: said ~~hexose in said xylose-containing~~ starting material of hydrolyzed lignocellulose containing material comprising xylose and glucose further comprises arabinose.

Claim 31 (canceled)

Claims 32-34 (canceled)

Claim ~~35~~¹⁸ (previously added) The process according to claim 1, wherein the fermentation is carried out at a pH of about 4-7 and at a temperature of about 25-35 C with a yeast concentration of 1 to 20 g per liter of solution for 24-144 hours in the presence of nutrients.

Claims 36-41 (canceled)